



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 10/664,747 | 09/18/2003 | Kendall E. Keene | OTD-030414 US | 5426 |
| 27778 | 7590 | 01/05/2006 | EXAMINER | |
| COOPER CAMERON CORPORATION | | | PATEL, VISHAL A | |
| PO BOX 1212 | | | ART UNIT | |
| HOUSTON, TX 77251-1212 | | | PAPER NUMBER | |

3673

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/664,747 | KEENE ET AL. | |
| | Examiner | Art Unit | |
| | Vishal Patel | 3673 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11/21/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/13/05 has been entered.

Information Disclosure Statement

The reference WO 03/095873 A3 has not been considered, the applicant has not provided a copy of the reference or relevant statement. The search report on second page of the IDS filed on 11/21/05 has two UK search reports but no copy of the search was provided by the applicant. Furthermore applicant should list all the reference of the search report on an IDS for the references to be considered.

Claim Objections

2. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claims recites limitation "the first ring, when placed in contact with one of the first and second bodies deforms in a manner so as to force the ends of the backup ring away from each other", which is considered to be intended use.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Taylor et al (US. 3,869,132).

Taylor illustrates a seal assembly for closing off an annular space between a first and second bodies and supported by at least one of the first and second bodies (intended use). The seal assembly having an annular shaped body having an upper and lower end (upper and lower ends of member 15 in figure 4), at least one backup ring (12) mounted on one of the ends of the body and having a relaxed dimension greater than the annular gap (the ring has a dimension greater than a gap that is between 10 and 11), the backup ring further comprises a bend between the opposed ends (bend in the middle of 12) to store a force created by insertion of the backup ring into the annular space and apply the force on the opposed ends against the first and second bodies and the ends of the backup ring loop toward each other (the ends of 12 loop toward each other) to create a gripping engagement with the body under a residual force upon initial mounting to the body. The body urges the ends of the backup ring away from each other (this is the case since the body contacts portions above and below the bend in the backup ring).

5. Claim 19 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Kilmoyer (US. 4,553,759).

Kilmoyer discloses a seal assembly for closing off an annular space between a first and second body and supported by at least one of the first and second bodies (intended use). The seal assembly having an annularly shaded body (72) having an upper (end near 82) and a lower end (end 74) and a longitudinal axis, the body comprises at least one first ring in a first groove (ring 80 in groove 86), the circumference of the first ring differs from the circumference of the first groove (the circumference of ring 80 differs then the circumference of the groove 86) so as to apply a net radial force to the body in a direction substantially perpendicular to the longitudinal axis and the circumference of the first ring is greater than the circumference of the groove (the ring 80 has a circumference that is greater than the circumference of the groove as seen in figure 3).

The body comprises a second ring (78) in a second groove (84) disposed on the opposite of the body from the first ring, the second ring, when the body is installed in the annular gap (intended use), is in an interference fit with the one of the first and second bodies to an extend of at least a portion of the cross-sectional diameter of the second ring. The first and second rings are made of virgin PTFE which has Durometer hardness of about 56-85 (this material has a Durometer hardness of 40-65, evidence of this is showed by Czernik et al, US. 3,924,907).

The circumference of the first ring at location nearest the first circumference of the first groove differs from the first circumference of the first groove (the circumference of the first ring is different that the circumference of the groove circumference).

The first ring is softer than the body.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kilmoyer.

Kilmoyer discloses the claimed invention except that the first ring circumference is 8-15% greater than the circumference of the first groove in which it is installed. Discovering an optimum range of a result effective variable involves only routine skill in the art. In re Kulling, 895 F.2d 1147, 14 USPQ 2d 1056. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first ring circumference be in the range of 8-15% greater than the circumference of the first groove in which it is installed as a matter of design choice.

Regarding to the limitations “when the body is installed in the annular gap, is in an interference fit with the one of the first and second bodies to an extend of at least about 20% of the cross-sectional diameter of the second ring” is considered to be intended use and the second ring of Kilmoyer is capable of being in an interference fit of 20% with respect with another body.

8. Claims 1-2, 5-18 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over McEver et al (US. 4,496,162) in view of Vanderford et al (US. 4,381,114) in further view of Taylor (US. 3,869,132) and further in view of Kilmoyer (Us. 4,553,759).

Art Unit: 3673

McEver discloses a seal assembly for closing off an annular space between first and second bodies (inner body 18 and outer body having surface 12) and supported by at least one of the first and second bodies (intended use). The seal assembly comprising an annular shaped body (36) having an upper and a lower end (upper and lower end of 36 having backup rings 50 and 52), at least one backup ring (backup rings 50 and 52) mounted on the ends of the annular shaped body and having a relaxed dimension greater than the annular space (the body and the backup ring have a greater dimension than an annular space because backup rings 50, 52 and body 36 contact the bodies) between the first and second bodies so that opposed ends on the backup ring must be compressed to be inserted in the annular gap (the body and the backup rings are compressed). The backup rings having ends that extend toward each other (body backup rings 50 and 52 have ends 56a and 56b that extend toward each other). The body urges the ends of the backup rings away from each other (this is the case since the body 36 is between ends 56a and 56b). The backup rings are placed between the bodies and the backup rings apply a force to the bodies. The annular shaped body has an interference fit with the bodies. The annular shaped body having an inner circumferential surface that contacts a first body and an outer circumferential surface that contacts a second body (inner body 18 and outer body having surface 12).

McEver discloses the invention substantially as claimed above but fails to disclose that the backup ring further comprising a bend between the ends to store a force. Vanderford discloses a seal body having ends and the ends having backup rings with ends (figure 4, seal 64' having ends with backup rings having ends 86', 84', 90' and 92') and a seal body having ends (fig. 5, 100), the ends of the seal having backup rings having ends (fig. 5, backup rings having

Art Unit: 3673

ends 110 and 107) and a bend (112) between the ends of the backup rings (fig.5, 112 is between the ends of the backup rings). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the backup rings of McEver to have a bend between the ends of the backup rings as taught by Vanderford, to provide additional strength (column 3, lines 67-68 of Vanderford).

McEver and Vanderford disclose the invention substantially as claimed above but fails to disclose that the ends of the backup ring loop toward each other to create a gripping engagement with the body under residual force upon initial mounting to the body (intended use). Taylor teaches to use an E-shape member having ends that loop towards each other (figure 4) instead of a C or U or V shape ring (figures 2-3 and 5), which is placed on an annular body having an upper and lower end. It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the ends of the backup ring of McEver and Vanderford to have loop ends as taught by Taylor, to provide a more resilient backup ring and lowering the amount of force required to squeeze the backup ring (column 4, lines 1-6 of Taylor).

McEver, Vanderford and Taylor disclose the invention substantially as claimed above but fail to disclose that the body comprises at least one first ring in a first groove, the circumference of the first ring exceeds the circumference of the first groove and the first ring, when placed in contact with one of the first and second bodies, deforms in a manner so as to force the ends of the backup ring away from each other (when a ring is placed in a groove of the body of McEver and Vanderford would cause this because the ring will compress the annular body inwardly and this will cause the annular body to force the ends of the backup rings to move away from each other), a second ring in a second groove and the circumference of the second ring is shorter than

Art Unit: 3673

the circumference of the second groove. The first ring at a location nearest the first circumference of the first groove differs from the first circumference of the first groove. Kilmoyer discloses a seal ring having a first groove (56), the first groove having a ring (48), a second groove (58) having a second ring (46), the circumference (outer circumference of the first ring 48) of the first ring exceeds the circumference of the first groove (the circumference of a bottom of the first groove and furthermore the first ring projects beyond the groove depth), the circumference of the second ring (inner circumference of the second ring) is shorter than the circumference of the second groove (the circumference of a bottom of the second groove and furthermore the ring projects beyond the groove depth), the rings are made of virgin PTFE (this material has a Durometer hardness of 40-65, evidence of this is showed by Czernik et al, US. 3,924,907), the first ring contacts a first body (22) and the second ring contacts a second body (26). The circumference of the first ring at location nearest the first circumference of the first groove differs from the first circumference of the first groove (the circumference of the first ring is different that the circumference of the groove circumference). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the annular body of McEver, Vanderford and Taylor to have first and second grooves to have first and a second rings, the circumference of the first ring exceeds the circumference of the first groove, the circumference of the second ring is shorter than the circumference of the second groove, the rings are made of virgin PTFE and the rings contact the bodies as taught by Kilmoyer to provide a seal at low temperatures (column 3, lines 15-16 of Kilmoyer).

Regarding claims 6 and 16: The first ring when placed in contact with on of the first and second bodies deforms in a manner so as to force the ends of the backup ring away from each

Art Unit: 3673

other, the body has a longitudinal axis and the deformation results in the first deforming into an undulating wave pattern in an axial direction parallel to the longitudinal axis (intended use, when something is placed into something else to cause a reaction).

Regarding claims 10 and 12-13: The first ring is the second ring of Kilmoyer because the first ring has a shorter circumference than the groove and contacts with one of the bodies that has larger dimension. Furthermore when the body is installed in the annular gap, is in an interference fit with the one of the first and second bodies to an extend of at least about 20% of the cross-sectional diameter of the first ring (this is considered to be intended use and further more see paragraph that rejects claim 14).

Regarding claim 16: This is rejected because all the structural limitations is disclosed by McEver, Vanderford, Taylor and Kilmoyer. The wave pattern in the axial direction is caused by the circumferential dimension of the first ring relative to the circumferential dimension of the first groove.

Regarding claim 7: McEver, Vanderford, Taylor and Kilmoyer disclose the claimed invention except that the first ring circumference is 8-15% greater than the circumference of the first groove in which it is installed. Discovering an optimum range of a result effective variable involves only routine skill in the art. In re Kulling, 895 F.2d 1147, 14 USPQ 2d 1056. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first ring circumference be in the range of 8-15% greater than the circumference of the first groove in which it is installed as a matter of design choice.

Regarding claim 11: McEver, Vanderford, Taylor and Kilmoyer disclose the claimed invention except that the first ring circumference is in the range of at least about 6-20% shorter than the circumference of the first groove in which it is installed. Discovering an optimum range of a result effective variable involves only routine skill in the art. In re Kulling, 895 F.2d 1147, 14 USPQ 2d 1056. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first ring circumference be in the range of at least about 6-20% shorter than the circumference of the first groove in which it is installed as a matter of design choice.

Regarding claims 14-15: McEver, Vanderford, Taylor and Kilmoyer disclose the claimed invention except that the second ring is in an interference fit with one of the bodies to an extend of about 20% of the cross-section diameter of the second ring (meaning that 20% of the diameter is contacting the body). Discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second ring in an interference fit with one of the bodies to an extend of about 20% of the cross-section diameter of the second ring as a matter of design choice.

Regarding claim 18: McEver, Vanderford and Kilmoyer disclose the claimed invention except that the second ring circumference is in the range of at least about 6-20% shorter than the

Art Unit: 3673

circumference of the second groove in which it is installed. Discovering an optimum range of a result effective variable involves only routine skill in the art. In re Kulling, 895 F.2d 1147, 14 USPQ 2d 1056. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second ring circumference be in the range of at least about 6-20% shorter than the circumference of the second groove in which it is installed as a matter of design choice.

9. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over McEver in view of Taylor and in further view of Kilmoyer.

McEver discloses a seal assembly for closing off an annular space between first and second bodies (inner body 18 and outer body having surface 12) and supported by at least one of the first and second bodies (intended use). The seal assembly comprising an annular shaped body (36) having an upper and a lower end (upper and lower end of 36 having backup rings 50 and 52), at least one backup ring (backup rings 50 and 52) mounted on the ends of the annular shaped body and having a relaxed dimension greater than the annular space (the body and the backup ring have a greater dimension than an annular space because backup rings 50, 52 and body 36 contact the bodies) between the first and second bodies so that opposed ends on the backup ring must be compressed to be inserted in the annular gap (the body and the backup rings are compressed). The backup rings having ends that loop toward each other (body backup rings 50 and 52 have ends 56a and 56b that loop toward each other). The body urges the ends of the backup rings away from each other (this is the case since the body 36 is between ends 56a and

Art Unit: 3673

56b). The backup rings are placed between the bodies and the backup rings apply a force to the bodies. The annular shaped body has an interference fit with the bodies. The annular shaped body having an inner circumferential surface that contacts a first body and an outer circumferential surface that contacts a second body (inner body 18 and outer body having surface 12).

McEver discloses the invention substantially as claimed above but fails to disclose that the ends of the backup ring loop toward each other to create a gripping engagement with the body under residual force upon initial mounting to the body (intended use). Taylor teaches to use an E-shape member having ends that loop towards each other, which is placed on an annular body having an upper and lower end. It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the ends of the backup ring of McEver to have loop ends as taught by Taylor, to provide a more resilient backup ring and lowering the amount of force required to squeeze the backup ring (column 4, lines 1-6 of Taylor).

McEver and Taylor disclose the invention substantially as claimed above but fail to disclose that the body comprises a first ring in a first groove, the circumference of the first ring exceeds the circumference of the first groove, when the first ring is placed in contact with one of the first and second bodies, the first ring deforms in a manner so as to force the ends of the backup ring away from each other (when a ring is placed in a groove of the body of McEver and Taylor would cause this because the ring will compress the annular body inwardly and this will cause the annular body to force the ends of the backup rings to move away from each other), a second ring in a second groove and the circumference of the second ring is shorter than the circumference of the second groove. The first ring at a location nearest the first circumference

Art Unit: 3673

of the first groove differs from the first circumference of the first groove. Kilmoier discloses a seal ring having a first groove (56), the first groove having a ring (48), a second groove (58) having a second ring (46), the circumference (outer circumference of the first ring 48) of the first ring exceeds the circumference of the first groove (the circumference of a bottom of the first groove and furthermore the first ring projects beyond the groove depth), the circumference of the second ring (inner circumference of the second ring) is shorter than the circumference of the second groove (the circumference of a bottom of the second groove and furthermore the ring projects beyond the groove depth), the rings are made of virgin PTFE (this material has a Durometer hardness of 40-65, evidence of this is showed by Czernik et al, US. 3,924,907), the first ring contacts a first body (22) and the second ring contacts a second body (26). The circumference of the first ring at location nearest the first circumference of the first groove differs from the first circumference of the first groove (the circumference of the first ring is different that the circumference of the groove circumference). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the annular body of McEver to have first and second grooves to have first and a second rings, the circumference of the first ring exceeds the circumference of the first groove, the circumference of the second ring is shorter than the circumference of the second groove, the rings are made of virgin PTFE and the rings contact the bodies as taught by Kilmoier to provide a seal at low temperatures (column 3, lines 15-16 of Kilmoier).

Regarding to the limitations “when the body is installed in the annular gap, is in an interference fit with the one of the first and second bodies to an extend of at least about 20% of the cross-sectional diameter of the second ring” is considered to be intended use and the seal

Art Unit: 3673

assembly of McEver et al, Taylor and Kilmoyer is capable of being in an interference fit of 20% with respect with another body.

10. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McEver, Taylor and Kilmoyer as applied to claim 22 above, and further in view of Vanderford.

McEver, Taylor and Kilmoyer disclose the invention substantially as claimed above but fail to disclose that the backup rings further comprising a bend between the ends of the backup rings to store a force. Vanderford discloses a seal body having ends and the ends having backup rings with ends (figure 4, seal 64' having ends with backup rings having ends 86', 84', 90' and 92') and a seal body having ends (fig. 5, 100), the ends of the seal having backup rings having ends (fig. 5, backup rings having ends 110 and 107) and a bend (112) between the ends of the backup rings (fig.5, 112 is between the ends of the backup rings). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the backup rings of McEver to have a bend between the ends of the backup rings as taught by Vanderford, to provide additional strength (column 3, lines 67-68 of Vanderford).

Regarding claims 24-25: This is rejected because all the structural limitations are disclosed by McEver, Vanderford and Kilmoyer. The wave pattern in the axial direction is caused by the circumferential dimension of the first ring relative to the circumferential dimension of the groove. The first ring when placed in contact with one of the first and second bodies deforms in a manner so as to force the ends of the backup ring away from each other, the body has a longitudinal axis and the deformation results in the first deforming into an undulating wave pattern in an axial direction parallel to the longitudinal axis (intended use, when something is placed into something else to cause a reaction).

Response to Arguments

11. Applicant's arguments filed 9/12/05 have been fully considered but they are not persuasive.

Applicants' argument that the claim 1 has added limitation that the first and second bodies are nested and this is not taught by Taylor is not persuasive because this limitation is in the preamble and the first and second bodies are not positively in the claim. Furthermore applicant argues that there is no sealing engagement to the backup ring in Taylor until there is a fire is not persuasive because as discussed in column 3, line 61 to column 4, line 9, the backup ring positively contacts the flange surfaces, which forms a seal.

Applicants' argument that the backup ring must be compressed to be inserted in the annular gap is not persuasive because applicant has not claimed the first and second bodies and this limitation is considered to be intended use. Furthermore the backup ring of Taylor is capable of being compressed and be inserted between two bodies.

Applicants' argument that Kilmoier does not teach that "the circumference of the first ring at a location nearest the first circumference of the first groove differs from the first circumference of the first groove" is not persuasive because as stated before the reference of Kilmoier does teach this. This argument also applies to claim 5.

Applicant' argument that McEver does not teach that the ends of the backup ring loop toward each other is correct but this deficiency is taught by Taylor.

12. In response to applicant's argument that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more,

Art Unit: 3673

weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Applicant argument to residual force is not persuasive because this is taught by Vanderford Jr. that a bend between two members would have this effect or is also taught by Taylor that the E-shape backup ring would provide a residual force and resiliency to the backup ring.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is 571-272-7060. The examiner can normally be reached on 6:30am to 8:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Suzanne L. Barrett can be reached on 571-272-7053. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VP
December 19, 2005

A handwritten signature in black ink, appearing to read 'Vishal Patel', with a stylized flourish at the end.

Vishal Patel
Patent Examiner, Tech. Center 3600

